RESPONSE

Claim Rejections - 35 U.S.C. 103

Claims 1, 2, 4-7, 9-11, and 24:

The Examiner has rejected claims 1, 2, 4-7, 9-11, and 24 under 35 U.S.C. 103(a) as being unpatentable over Belloch et al. (US 5,768,594), in view of Schlansker et al. (US 5,710,912), and further in view of Krishna et al. (US 6,161,173), and further in view of Akkary et al. (US 6,493,820). Applicant respectfully disagrees with the Examiner.

Even if the combination suggested by the Examiner were made, it would still not anticipate the claimed invention because not all claim elements are taught by the combination. For example, regarding independent claim 1 the combination does not teach the Applicant's claimed limitation of "A programmable processor for executing a plurality of programs, said programmable processor comprising: ... an interleaver for interleaving instructions from said plurality of programs..." The Examiner contends that Blelloch et al. discloses this particular limitation. However, the Applicant respectfully disagrees.

It appears from the Examiner's argument that the Examiner analogizes the interleaver of the present invention to the assignment manager AM1 in Figure 1 of Blelloch et al. The interleaver is different than the assignment manager because the interleaver interleaves instructions from different programs whereas the assignment

manager assigns different tasks from an individual program to be processed in multiple processors.

It is evident that the interleaver interleaves instructions from different programs by referring to page 10 of the patent application which reads, "This invention takes advantage of the large amount of processing inherent in graphics processing by interleaving the programs...When a program is waiting for the results of a first instruction for data needed in a second instruction, the processor is not idle, it is executing instructions of other programs." For example, if the processor is in the process of processing instructions from program 1 and the processor can no longer proceed to process program 1's instructions because it requires further information, the interleaver will then have the processor start to process instructions from another program (e.g., program 2) so that the processor does not sit idle. The processor will proceed to process program 2's instructions until it receives the information that it needed to continue to process program 1's instructions. Once the processor receives that needed information, the processor will stop processing program 2's instructions and continue to process program 1's instructions where it left off.

Conversely, it is clear that the assignment manager assigns different tasks from an individual program to be processed in multiple processors in parallel by referring to Blelloch et al. (col. 2, lines 19-42) which reads, "The incoming program may be any sequential program that takes the form of some programming language that reveals the tasks to be performed by parallel processing...Specifically, the assignment manager AM1

supplies a set of available tasks to be executed by each processing element PE1...Each processing element PE1...executes the instructions of the tasks in the task buffer, and informs the assignment manager AM1 when tasks are completed. The assignment manager AM1 proceeds as long as there are more program tasks to be executed and as long as the program is not completed." Thus, there is no mention in Blelloch et al. that the assignment manager will interrupt the processor from processing a task when the processor is waiting for needed information and then supply that processor with another task to process so that the processor does not remain idle.

Since a prima facie showing of obviousness must teach all of the claim limitations, the rejection of claim 1 is moot.

Dependent claims 2, 4-7, and 9-11 are dependent on claim 1. Thus, if the Examiner decides that claim 1 is allowable, then these dependent claims are themselves allowable.

It is apparent by referring to claim 24 that the combination suggested by the Examiner would not anticipate the claimed invention because not all claim elements are taught by the combination. In regards to claim 24, the combination does not teach the Applicant's claimed limitation of "A method of gathering instructions from a plurality of programs comprising:...interleaving instructions from said N programs in said processor pipeline." The Examiner asserts that Blelloch et al. discloses this particular limitation.

However, the Applicant respectfully disagrees. The Applicant's reasoning for this is described in the discussion above regarding claim 1.

Since a prima facie showing of obviousness must teach all of the claim limitations, the rejection of claim 24 is moot.

Claim 8:

Examiner has rejected claim 8 under 35 U.S.C. 103(a) as being unpatentable over Belloch et al. (US 5,768,594) in view of Schlansker et al. (US 5,710,912), and further in view of Krishna et al. (US 6,161,173), and further in view of Akkary et al. (US 6,493,820) as applied to claim 1 and further in view of Nguyen et al. (US 5,961,628). Applicant respectfully disagrees with the Examiner. Claim 8 is dependent on claim 1. Thus, if the Examiner decides that claim 1 is allowable, then the rejection of claim 8 is moot.

Claims 12 and 13:

The Examiner has rejected claims 12 and 13 under 35 U.S.C. 103(a) as being unpatentable over Belloch et al. (US 5,768,594) in view of Schlansker et al. (US 5,710,912), and further in view of Krishna et al. (US 6,161,173), and further in view of Akkary et al. (US 6,493,820) as applied to claim 1 and further in view of Narayanaswami (US 5,973,705). Applicant respectfully disagrees with the Examiner. Claims 12 and 13 are dependent on claim 9, which is dependent on claim 1. Thus, if the Examiner decides that claim 1 is allowable, then the rejection of claims 12 and 13 is moot.

Claims 3, 14-18, and 23:

The Examiner has rejected claims 3, 14-18, and 23 under 35 U.S.C. 103(a) as being unpatentable over Belloch et al. (US 5,768,594) in view of Schlansker et al. (US 5,710,912), and further in view of Krishna et al. (US 6,161,173), and further in view of Akkary et al. (US 6,493,820) as applied to claim 1 and further in view of Naini et al. (US 6,209,083). Applicant respectfully disagrees with the Examiner.

Regarding independent claim 14, the combination suggested by the Examiner does not anticipate the claimed invention because it does not teach all elements of the claimed invention. For example, regarding independent claim 14 the combination does not teach the Applicant's claimed limitation of "A method of executing instructions from a plurality of programs comprising:...interleaving instructions from said N programs in a processor pipeline..." The Examiner contends that Blelloch et al. discloses this particular limitation. However, the Applicant respectfully disagrees. The Applicant's reasoning for this is described in the discussion above regarding claim 1.

Since a prima facie showing of obviousness must teach all of the claim limitations, the rejection of claim 14 is moot.

Regarding independent claim 23, the combination suggested by the Examiner does not anticipate the claimed invention because it does not teach all elements of the claimed invention. For example, regarding independent claim 23 the combination does

not teach the Applicant's claimed limitation of "A programmable processor for executing a plurality of programs, said programmable processor comprising:...an interleaver for interleaving instructions from said plurality of programs..." The Examiner contends that Blelloch et al. discloses this particular limitation. However, the Applicant respectfully disagrees. The Applicant's reasoning for this is described in the discussion above regarding claim 1.

Since a prima facie showing of obviousness must teach all of the claim limitations, the rejection of claim 23 is moot.

Dependent claim 3 is dependent on claim 1. Thus, if the Examiner decides that claim 1 is allowable, then dependent claim 3 is itself allowable.

Dependent claims 15-18 are dependent on claim 14. Thus, if the Examiner decides that claim 14 is allowable, then these dependent claims are themselves allowable.

Claims 25 – 33:

The Examiner has rejected claims 25-33 under 35 U.S.C. 103(a) as being unpatentable over Akkary et al. (US 6,493,820). Applicant respectfully disagrees with the Examiner.

Regarding independent claim 25, Applicant contends that the combination does not anticipate the claimed invention because the combination does not teach all elements

of the claimed invention. For example, the combination does not teach the Applicant's claimed limitation of "A programmable processor for executing a plurality of programs, said programmable processor comprising: a target program counter coupled to a plurality of program counters." The Examiner contends that Akkary et al. discloses a plurality of program counters that are each coupled to an instruction memory that is coupled to an instruction decode. However, the Examiner does not assert that Akkary et al. teaches the claimed limitation of a target program counter coupled to a plurality of program counters. Nonetheless, the Applicant contends that Akkary et al. does not teach a target counter coupled to a plurality of program counters. Thus, since a prima facie showing of obviousness must teach all of the claim limitations, the rejection of claim 25 is moot.

Dependent claims 26-31 are dependent on claim 25. Thus, if the Examiner decides that claim 25 is allowable, then these dependent claims are themselves allowable.

Regarding independent claim 32, Applicant contends that the combination does not anticipate the claimed invention because the combination does not teach all elements of the claimed invention. For example, the combination does not teach the Applicant's claimed limitation of "A method of executing one or more complex or compounds instructions from a plurality of programs, comprising: implementing said instructions in one or more pipelined units wherein each of said instructions is issued to said one or more units in each cycle." The Examiner contends that Akkary et al. discloses this particular limitation. However, the Applicant respectfully disagrees.

It can be inferred that the Examiner analogizes the pipelined units of the present invention to the pipeline 108 in Figure 2 and the multipipeline unit 402 in Figure 37 of Akkary et al. The present invention is different Akkary et al. because in the present invention instructions are issued to one or more pipelined units in each cycle whereas in Akkary et al. there is no reference that instructions are issued at every clock cycle to the pipeline 108 or the multipipeline unit 402.

Since a prima facie showing of obviousness must teach all of the claim limitations, the rejection of claim 32 is moot.

Regarding independent claim 33, Applicant contends that the combination does not anticipate the claimed invention because the combination does not teach all elements of the claimed invention. For example, the combination does not teach the Applicant's claimed limitation of "A method of executing one or more instructions from a plurality of programs, comprising:... placing an no-op when no more instructions are available or said second output register slot is not available..." The Examiner contends that Akkary et al. discloses this particular limitation. However, the Applicant respectfully disagrees. The Applicant contends that Akkary et al. does it specifically teach that a no-op (no operation) instruction is to be sent when no more instructions are available or when the second output register slot is not available.

Since a prima facie showing of obviousness must teach all of the claim limitations, the rejection of claim 33 is moot.

CONCLUSION

For at least the foregoing reasons, Applicant respectfully submits that pending claims 1-18, and 23-33 are patentably distinct from the prior art of record and in condition for allowance. Applicant therefore respectfully requests that pending claims 1-18, and 23-33 be allowed.

Respectfully submitted,

COUDERT BROTHERS LLP

Date: January 14, 2005

By: _____
J. D. Harriman II
Reg. No. 31,967